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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,311	01/31/2002	Kyung Chul Woo	3449-0190P	5488
2292	7590	11/17/2003		
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER	
			JAGAN, MIRELLYS	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/059,311	WOO ET AL.
	Examiner Mirellys Jagan	Art Unit 2859

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 August 2003.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 and 8-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 1/31/02 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.  
4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Drawings***

1. The drawings filed on 1/31/02 are accepted by the examiner.

***Claim Objections***

2. Claim 10 is objected to because of the following informalities:

There is lack of antecedent basis in the specification for the cap being made of an epoxy resin. The specification states that the heat insulating material in the hollow space can be made of epoxy resin (see page 5, line 19; and page 7, line 14). Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,765,160 to Yamamoto et al [hereinafter Yamamoto] in view of Japanese Patent 59148837 to Koyamoto.

Yamamoto discloses a washing machine (10) having a water gauge chamber (40) extending along one side of an outer edge of an outer tub (14) of the washing machine, the washing machine having a water temperature sensor (46) comprising a temperature measuring

part (thermistor) in a housing located at a bottom edge of the water gauge chamber for measuring a temperature of water (see figure 1 and column 3, lines 43-60).

Yamamoto does not disclose the temperature measuring part being mounted in a seating portion of a hollow chamber cap that includes a heat insulating material.

Koyamoto discloses a water temperature sensor comprising:  
a temperature measuring part (5) having signal lines (12) for connecting the part with a circuit for measuring the temperature of water, and

a hollow chamber cap (3) fitting into and closing an opened portion of a water chamber, the chamber cap having a hollow part (4) forming a seating portion for mounting of the temperature measuring part, wherein the hollow part has a heat insulating material (11) therein for insulating and sealing the part within the cap.

Referring to claim 1, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the washing machine disclosed by Yamamoto by replacing the water temperature sensor with the water temperature sensor disclosed by Koyamoto, since these sensors are alternate and equivalent known means for sensing the temperature of water in a chamber.

Furthermore, referring to claim 9, in modifying the washing machine of as stated above, a bottom edge of the cap (the edge of the planar surface of 10 that is exposed to the water) will be substantially level with a bottom edge of the outer tub (14).

Referring to claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the washing machine disclosed by Yamamoto by making the cap of an epoxy resin since the particular type of material claimed by applicant, i.e.,

epoxy resin, absent any criticality, is only considered to be the use of a “preferred” or “optimum” material out of a plurality of well known materials that a person having ordinary skill in the art at the time the invention was made would have been able to provide based on the intended use of applicant’s apparatus, i.e., suitability for the intended use of applicant’s apparatus, which in this case is to provide a housing for a temperature sensor to measure the temperature of water in a washing machine. See *In re Leshin*, 125 USPQ 416 (CCPA 1960), where the courts held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Japanese Patent 02010127 to Mochizuki.

Yamamoto discloses a washing machine (10) having a water gauge chamber (40) extending along one side of an outer edge of an outer tub (14) of the washing machine, the washing machine having a water temperature sensor (46) comprising a temperature sensor (thermistor) in a housing located at a bottom edge of the water gauge chamber for measuring a temperature of water. The temperature sensor has signal lines connecting the sensor to a circuit for obtaining the temperature measurement of the water (see figure 1, column 3, lines 43-60, and column 5, lines 13-29).

Yamamoto does not disclose the temperature sensor being mounted in a recess formed underneath a top surface of a hollow chamber cap that has a hollow space facing downward and fits through and closes an opening in the bottom portion of the water gauge chamber.

Mochizuki discloses a fluid temperature sensor for measuring the temperature of a fluid in a conduit, the fluid temperature sensor comprising a thermistor (e) having signal lines for connecting the thermistor with a circuit for measuring the temperature of the fluid. The thermistor is mounted in a recess formed underneath a top surface (in a) of a hollow chamber cap (d) that has a hollow space (in b) that can face downward and is filled with a heat insulating epoxy resin, the chamber cap (d) fitting through and closing an opening in the conduit wall (see figure 5).

Referring to claim 3, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the washing machine disclosed by Yamamoto by replacing the temperature sensor with the temperature sensor disclosed by Mochizuki, since these sensors are alternate and equivalent known means for measuring the temperature of a fluid in a chamber.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Mochizuki.

Yamamoto discloses a washing machine (10) having a water gauge chamber (40) extending along one side of an outer edge of an outer tub (14) of the washing machine, the washing machine having a water temperature sensor (46) comprising a temperature sensor (thermistor) in a housing located at a bottom edge of the water gauge chamber for measuring a temperature of water, and signal lines connecting the sensor to a circuit for obtaining the temperature measurement of the water (see figure 1, column 3, lines 43-60, and column 5, lines 13-29).

Yamamoto does not disclose the housing of the water temperature sensor being a cylindrical probe and a hollow cap having a hole at the center thereof so that the probe can be inserted through the hole so that the probe directly contacts the liquid in the chamber, and a heat insulating material inserted into a hollow space in the probe for insulating and securing the temperature sensor in the probe.

Mochizuki discloses a fluid temperature sensor for installing into a wall of a fluid-containing conduit to sense the temperature of the fluid held within the conduit. The fluid temperature sensor comprises a thermistor (7) having signal lines for connecting the thermistor with a circuit, wherein the thermistor and the signal lines are mounted within a cylindrical probe (2); a hollow cap (15) having a hole at the center thereof so that the probe can be inserted through a hole in the conduit so that the probe directly contacts the fluid in the conduit; and a heat insulating material inserted into a hollow space in the probe for insulating and securing the thermistor in the probe (see figure 4).

Referring to claim 5, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the washing machine disclosed by Yamamoto by replacing the water temperature sensor with the fluid temperature sensor disclosed by Mochizuki, since these sensors are alternate and equivalent known means for measuring the temperature of a fluid in a chamber.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and Koyamoto, as applied to claims 1, 2, 9, and 10 above, and further in view of U.S. Patent 4,510,343 to Sivyer.

Yamamoto and Koyamoto disclose a washing machine having all of the limitations of claim 8, as stated above in paragraph 4, except for the cap being welded to the water gauge chamber.

Sivyer discloses a temperature sensor for sensing temperatures within a chamber. The temperature sensor includes a temperature-sensing element in a housing that is welded to the chamber wall for sealing the opening in the wall.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the washing machine disclosed by Yamamoto and Koyamoto by welding the cap to the wall, as taught by Sivyer, in order to seal the opening in the wall.

#### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent and publication disclose a washing machine having temperature-sensing means:

U.S. Patent 4,643,350 to DeSchaaf et al

U.S. Patent Application Publication 2001/0046253 to Schmidt

The following patents disclose a temperature sensor:

U.S. Patent 5,199,789 to Mauric

U.S. Patent 3,188,866 to Mayer

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirells Jagan whose telephone number is 703-305-0930. The examiner can normally be reached on Monday-Thursday from 8AM to 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 703-308-3875. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7725 for regular communications and 703-308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

mj

November 11, 2003



**Diego Gutierrez**  
**Supervisory Patent Examiner**  
**Technology Center 2800**